

CLAIMS

What is claimed is:

1. In a conveyor of the type in which a length of roller-chain is entrained around first and second spaced apart sprocket assemblies to dispose a stretch of the roller-chain for
5 load bearing on a guide plate interposed between the first and second sprocket assemblies and with the roller-chain being operable to transport a load in an axial direction defined by an axis oriented along the stretch of roller-chain, the improvement comprising:
a bed plate comprising a foundation plate and said guide plate, a top surface of said
foundation plate receiving a bottom surface of said guide plate in a stacked
10 arrangement, wherein:
said foundation plate comprises a first material and is adapted for attachment to
structure of said conveyor; and
said guide plate comprises a second material and is adapted for removable
attachment to said foundation plate.
- 15 2. The improvement of claim 1, wherein:
said foundation plate comprises a metal; and
said guide plate comprises a plastic.
3. The improvement of claim 1, wherein:
said foundation plate comprises a hold-down structure disposed on said top surface of
20 said foundation plate; and
said guide plate comprises a socket disposed on said bottom surface of said guide plate,
said socket being structured and arranged to receive said hold-down structure in a
slide-together fit to effect an installed configuration whereby to resist separation,
in a direction normal to said top surface of said foundation plate, of said guide
25 plate away from said foundation plate.
4. The improvement of claim 3, wherein:
said hold-down structure comprises a vertical member and a transverse member, said
vertical member spacing said transverse member apart from said top surface;
said socket comprises a rim; and

in said installed configuration, said transverse member creates a structural interference with said rim to resist separation, in a direction normal to said top surface of said foundation plate, of said guide plate away from said foundation plate.

5. The improvement of claim 4, further comprising:

5 a plurality of hold-down structures distributed over an area of said foundation plate and a plurality of sockets arranged to engage with said plurality of hold-down structures.

6. The improvement of claim 4, wherein:

10 said vertical member of said hold-down structure is further arranged in harmony with structure of said socket whereby to resist motion in said axial direction of said guide plate with respect to said foundation plate beyond said installed configuration.

7. The improvement of claim 3, wherein:

said hold-down structure comprises an enlarged head carried on a substantially vertical stem.

15 8. The improvement of claim 7, wherein:

said stem is press-fit into receiving structure of said foundation plate.

9. The improvement of claim 7, wherein:

said stem is threaded into receiving structure of said foundation plate.

10. The improvement of claim 3, wherein:

20 said socket comprises a T-slot.

11. The improvement of claim 3, wherein:

said socket is disposed within a thickness of said guide plate to leave a top surface of said guide plate uninterrupted over a location of said socket.

12. The improvement of claim 3, wherein:

25 a hold-down system operable to resist motion, in a direction parallel to said top surface, of said guide plate relative to said foundation plate to retain said guide plate in said installed configuration, comprises:

a fastener disposed near an end of said guide plate for anchoring to structure associated with said foundation plate; and

a standoff disposed to receive said fastener through a thickness of said guide plate,
said standoff being configured and arranged to resist over-tightening of
said fastener.

13. The improvement of claim 1, wherein:

5 a lubricated sliding interface between said roller chain and said second material has a
coefficient of friction lower than a corresponding coefficient of friction between
steel-on-steel.

14. The improvement of claim 1, wherein:

10 a lubricated sliding interface between said roller chain and said second material has a
coefficient of friction lower than a corresponding coefficient of friction between
said roller chain and a hardened steel surface.

15. The improvement of claim 1, wherein:

a lubricated sliding interface between said roller chain and said second material has an
effective dynamic coefficient of friction lower than about 0.08.

15 16. The improvement of claim 1, wherein:

said guide plate comprises a sheet of plastic material having mechanical wear properties
at least substantially equivalent to Tyvar 88 plastic material.

17. A method for installing a guide plate for a roller-chain onto a roller-chain type
conveyor, comprising the steps of:

20 a) placing said guide plate for stacked engagement, at a first axial position, with a
bottom surface of said guide plate substantially in the plane of a top surface
of a foundation structure to place hold-down structure carried by said
foundation structure into position for reception in retention socket
structure, said socket structure being disposed in a thickness, and opening
25 to a bottom surface, of said guide plate;

b) sliding said guide plate, in a direction of travel of said roller-chain, to a second
axial position to engage a first portion of said holding structure with a
second portion of said socket structure to form a structural interference
between said first portion and said second portion operable to resist a

displacement, in a direction normal to said top surface, of said guide plate away from said foundation structure; and

- c) installing a stop element to resist motion of said guide plate from said second axial position.

5 18. A bed plate for a roller-chain conveyor assembly, the bed plate comprising: a foundation platform and a guide plate, a top surface of said foundation platform receiving a bottom surface of said guide plate in a stacked arrangement, wherein: said foundation platform is adapted for attachment to structure of said conveyor; and

10 said guide plate comprises a material having a coefficient of dynamic friction, at a lubricated interface with said roller-chain, of less than about 0.08, said guide plate being adapted for removable attachment to said foundation platform, a top surface of said guide plate carrying a plurality of ridge elements, said ridge elements being configured for reception between side
15 plates of a strand of said roller-chain whereby to guide said strand along an axial path, a top surface of said ridge elements being adapted to support a roller element of said roller-chain for rolling engagement thereon.

19. The bed plate of claim 18, further comprising:

first hold-down structure carried by said guide plate and second hold-down structure
20 carried by said foundation platform, said first and second hold-down structure being mutually arranged to form an interlocking engagement effected by a displacement of said guide plate relative to said foundation platform, said engagement forming a structural interference operable to resist displacement of
25 said guide plate in a direction normal to said top surface of said foundation platform, away from engagement with said foundation platform.

20. The bed plate of claim 19, further comprising:

a retaining pin installable to pierce structure associated with said guide plate for reception of a portion of said retaining pin in structure associated with said foundation

platform, said retaining pin being adapted to resist an axial displacement of said guide plate from an installed axial position.